



Certificate of Compliance

Certificate: 70179056

Master Contract: 153857

Project: 70179056

Date Issued: 2019-02-11

Issued to: Vega Grieshaber KG
Am Hohenstein 113
Schiltach, Baden-Württemberg 77761
GERMANY
Attention: Martin Schmitt

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Hossein Saleh
Hossein Saleh

PRODUCTS

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

CLASS 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations - Certified to U.S. Standards

Class I, Division 1, Groups B, C and D, T6...T1

Ex db ia IIC T6...T1 Gb

Ex ia/db IIC T6...T1 Ga/Gb

Class I, Zone 1, AEx db ia IIC T6...T1 Gb

Class I, Zone 0/1, AEx ia/db IIC T6...T1 Ga/Gb

Differential pressure measuring device type VEGADIF DF85 are used for differential pressure measurement of liquids and gases. The equipment consists of an electronics housing, a differential pressure measuring element and the process connections. Optionally, also the indication and operation module may be installed.

The following electronic versions are available:

VEGADIF DF85(*).*E/*****Z*****: 2 wire 4 ... 20 mA transmitters

VEGADIF DF85(*).*E/*****H*****: 2 wire 4 ... 20 mA transmitters with superposed HART signal





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VEGADIF DF85(*) *E/*****A*****: 2 wire 4 ... 20 mA transmitters with superposed HART signal and additional SIL qualification
VEGADIF DF85(*) *E/*****U*****: With electronics for MODBUS
VEGADIF DF85(*) *E/*****D*****: With electronics for Profibus PA
VEGADIF DF85(*) *E/*****F*****: With electronics for Foundation Fieldbus

Nomenclature:

Model Code VEGADIF85().a-b-c-d-e-f-g-h-i-j-k-l-m-n*

a = Scope: For internal use

b = Approval: E¹, *¹

c = Process fitting / Material: One digit variable designating type of process fitting

d = Membrane Material: One digit variable designating the material type of the Membrane

e = Sealing/Material: One digit alphanumeric variable: FKM, EPDM, *

f = Range: One digit variable designating the allowable measurement range of the pressure cell

g = Accuracy class: One digit variable designating the accuracy of the instrument

h = Electronics: Z, H, A, U, P, F

i = Additional electronics: X, Z

j = Housing: A, D, V, W, *²

k = Housing / Protection: D

l = Cable entry / Connection: D, 1, N, Q

m = Operation and indication unit PLICSCOM: X, A, K, F, B, L

n = Additional certificates: One digit variable designating any type of test certificates required by the customer

Note 1 - More markings are possible in case the version is separately certified according to an additional certificate.

Note 2 - Aluminum in special color: '' can be H, S, or other character.*

Electrical Data:

VEGADIF DF85.*****Z/H/A/U/P/F*****

Supply and signal circuit: U = 9.6...35 VDC
VEGADIF DF85.*****Z/H/AXA/V**** U_m = 253 VAC
Terminal 1[+], 2[-] in electronics compartment of the single chamber housing
VEGADIF DF85.*****Z/H/AXD/W****
Terminal 1[+], 2[-] in terminal compartment of the double chamber housing

VEGADIF DF85.*****Z/H/AZD/W****

Supply and signal circuit I: U = 9.6...35 VDC
Terminal 1[+], 2[-] in electronics compartment of the single chamber housing U_m = 253 VAC

Supply and signal circuit II: U = 9.6...35 VDC
Terminal 17[+], 18[-] in terminal compartment of the double chamber housing U_m = 253 VAC



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VEGADIF DF85.*****UXD/W****

Supply and signal circuit I: Terminal 1[+], 2[-] in terminal compartment of the double chamber housing	U= 8...32 VDC $U_m = 253$ VAC
Supply and signal circuit II: Terminal MB[+], MB[-] in terminal compartment of the double chamber housing	U= 5 V DC $U_m = 253$ VAC MODBUS-telegram
Supply and signal circuit III: 6-pole mini-USB socket in the terminal compartment of the double chamber housing	U= 5 VDC $U_m = 253$ VAC USB-protocol
Supply and signal circuit:	U= 9...32 VDC $U_m = 253$ VAC

VEGADIF DF85.*****P/FXA/V****

Terminal 1[+], 2[-] in electronics compartment of the single chamber housing
VEGADIF DF85.*****P/FXD/W****
Terminal 1[+], 2[-] in terminal compartment of the double chamber housing

Display and adjustment circuit:

Only for connection to the associated VEGA display unit VEGADIS81

VEGADIF DF85.*****Z/H/A/P/F*A/V****

Terminals 5, 6, 7, 8 in electronics compartment of the single chamber housing
VEGADIF DF85.*****Z/H/A/P/F*D/W****
Terminals 5, 6, 7, 8 in terminal compartment of the double chamber housing

Display and adjustment circuit:

Only for connection to the display and adjustment module PLICSCOM.

Spring contacts in terminal / electronics compartment of the single / double chamber housing

Thermal Data:

If the differential pressure measuring devices are used in explosion hazardous areas for EPL Ga/Gb or Gb or Class I, Division 1 applications, the permissible temperature range in the area of the electronics/at the measuring sensor dependent on the temperature code has to be taken from the following table:

T-Code	Ambient temperature range Ta or process temperature range Tp at the sensor housing and measuring probe
T6, T5	-40°C...+55°C
T4, T3, T2, T1	-40°C...+60°C



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Enclosure Rating - IP - Type:

Model	Housing	Electronics	IP	Type
A	Aluminum Single Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F	IP66/IP68(0.2bar)	6P
*3	Aluminum Single Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F	IP66/IP68(0.2bar)	6P
D	Aluminum Double Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F, U	IP66/IP68(0.2bar)	6P
*3	Aluminum Double Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F, U	IP66/IP68(0.2bar)	6P
V	StSt (Precision Casting) 316L Single Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F	IP66/IP68(0.2bar)	6P
W	StSt (Precision Casting) Double Chamber / IP66/IP68 (0.2bar)	Z, A, H, P, F, U	IP66/IP68(0.2bar)	6P

Note 3 – Aluminum in special color: ‘’ can be H, S, or other character.*

Notes:

1. The above model is fixed connection, Pollution Degree 4 (Macro Environment), Pollution Degree 2 (Micro Environment), Overvoltage Category I.
2. Mode of operation: Continuous.
3. Environmental Conditions: Extended, Indoor and outdoor use, Ambient temperature and RH% range depending on the model see manual, altitude up to 5000 m.

Conditions of Acceptability:

1. To be supplied by a Class 2 or Limited Energy Source in accordance with CSA 61010-1-12 or UL 61010-1, Third Edition.
2. For use as Ga/Gb apparatus:
 For functional reasons, the partition wall (membrane) to the wetted area has a wall thickness < 1 mm. In the application, it has to be ensured, that an impairment of the separation wall e.g. by aggressive media or mechanical hazards is excluded.
 For variants with standard process connections:
 The installation of the meter bodies shall provide a minimum degree of protection IP67 according to CSA/ANSI/IEC 60529 for the process connections and vents.
 For variants with capillary connections:
 The capillary connections are designed to be connected to a capillary with diaphragm seal. The filling holes are intended to bring in a fill fluid.
 To prevent a zone entrainment from Zone 20, the diaphragm seal or the diaphragm seal and capillary have to be suitably designed. The pressure transfer system has to be technically tight. The filling hole has to be tightly sealed.
3. At the plastic part there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.
4. At the metallic parts made of light metal there is danger of ignition by impact or friction. Observe manual of the manufacturer.
5. The cable entries and blanking elements must be suitably certified and be compatible with the degree of protection (IP and Type rating) and explosion protection provided by enclosure, the applicable gas groups, and for operating temperature of -40°C to +60 °C.
6. Wiring shall be in accordance with Class I, Division 1/Zone 1 wiring method per the Canadian Electrical Code (CEC) for installation in Canada and per National Electrical Code (NFPA 70) for installation within U.S.



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7. The 3/8" NPT threaded port of the Dual-Chamber housing shall not be used as a field wiring conduit entry and has to be closed at all times with a suitable plug.
8. End-user shall ensure the device is properly connected to Earth upon installation.

APPLICABLE REQUIREMENTS

Standard Number	Issue Date / Edition	Title
CAN/CSA C22.2 No. 0-10	R2015*	General Requirements - Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 61010-1-12	2012	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1 General Requirements
CAN/CSA C22.2 No. 94.2-15	2015 / 2 nd Edition	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA C22.2 No. 60529:16	2016 / 2 nd Edition	Degrees of protection provided by enclosures (IP Code)
CAN/CSA C22.2 No 30-M1986	R2016 / 3 rd Edition	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CAN/CSA C22.2 No. 60079-0:15	2015 / (Ed. 6.0)**	Explosive Atmospheres - Part 0: Equipment - General Requirements
CAN/CSA C22.2 No. 60079-1:16	2016 / (Ed. 7.0)	Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"
CAN/CSA C22.2 No. 60079-11:14	2014 / (Ed. 6.0)	Electrical apparatus for explosive gas atmospheres - Part 11: intrinsic safety "i"
CAN/CSA C22.2 No. 60079-26	2016 / (Ed. 3.0)	Explosive atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga
UL 61010-1	2015 / 3 rd Edition	Standard for Safety - Electrical Equipment for Measurement, Control, and Laboratory use; Part 1: General requirements
UL 50E	2015 / 2 nd Edition	Enclosures for Electrical Equipment, Environmental Considerations
ANSI/IEC 60529	2004	Degrees of protection provided by enclosures (IP Code)
UL 913	2015 / 8 th Edition	Intrinsically Safe and Associated Apparatus For Use In Class I, II, and III, Division 1, Hazardous (Classified) Locations
ANSI/UL 60079-0	2013 / (Ed. 6.0)	Explosive Atmospheres - Part 0: Equipment - General Requirements
ANSI/UL 60079-1	2015 / (Ed. 7.0)	Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"
ANSI/UL 60079-11	2013 / (Ed. 6.0)	Explosive Atmospheres - Part 11: Equipment Protection by Intrinsic Safety "i"
ANSI/UL 60079-26	2017 / (Ed. 3.0)	Explosive Atmospheres - Part 26: Equipment with Equipment Protection Level (EPL) Ga
FM Class 3600	2018	Electrical Equipment for Use in Hazardous (Classified) Locations - General Requirements
FM Class 3615	2018	Explosionproof Electrical Equipment - General requirements

* 'R' = 'Reaffirmed'

** '(Ed. n.n)' refers to Edition No. of IEC standard for the mention national standard



Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
70179056	2019-02-11	Original CSA HAZLOC certification for North America (Canada and USA) of VEGADIF DF85 series of differential pressure sensors for "E x db"/XP" method of protection based on acceptance of IECEx certificates and reports issued by IECEx Certification Agencies.

